

CLAIMS

We claim:

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1. A control mechanism for a hydrostatic transmission having a housing, a brake mechanism and a transmission control arm mounted on the housing, the control mechanism comprising:

a support rod;

10 a first linkage member rotatably mounted on the support rod and having first and second oppositely extending arms mounted thereon, where the first arm is operatively connected to a vehicle drive control and the second arm is operatively connected to the transmission control arm; and

15 a second linkage member rotatably mounted on the first linkage member and having third and fourth oppositely extending arms mounted thereon, where the third arm is operatively connected to a vehicle brake control and the fourth arm is operatively connected to the brake mechanism.

2. A control mechanism as set forth in Claim 1, further comprising:

20 a return arm mounted on the transmission housing and connected to the fourth linkage member arm;

a brake arm mounted on the transmission housing and operatively connected to engage the brake mechanism;

a first spring device having a first end connected to the return arm and a second end connected to the brake arm.

25 3. A control mechanism as set forth in Claim 2, wherein the first spring device comprises an extended loop to engage the return arm, so that actuation of the second

linkage member causes movement of the return arm before the first spring device provides force to the brake arm.

4. A control mechanism as set forth in Claim 2, further comprising a second spring device having a first end mounted to the brake arm and a second end mounted to the transmission housing to provide a return force to the brake arm.
5. A control mechanism as set forth in Claim 1, wherein the hydrostatic transmission comprises a rotatable pump driven by an input shaft and controlled by a movable swash plate, wherein the transmission control arm is operatively connected to the swash plate.
6. A control mechanism as set forth in Claim 1, wherein the transmission comprises a hydrostatic transaxle having a pair of axles extending from the transmission housing, and the axles are located between the first and second linkage members and the transmission control arm.
7. A control mechanism for a transmission mounted in a vehicle having a drive control and a brake control, the control mechanism comprising:
 - 15 a first symmetric linkage member rotatably mounted with respect to the vehicle and comprising a first pair of arms mounted thereon and extending in opposite directions from one another; and
 - a second symmetric linkage member rotatably mounted on the first symmetric linkage member and comprising a second pair of arms mounted thereon and extending in opposite directions from one another.
 - 20 8. A control mechanism as set forth in Claim 7, further comprising a support rod mounted at both ends thereof to a frame of the vehicle, and wherein the first symmetric linkage member is rotatably mounted on the support rod.

9. A control mechanism as set forth in Claim 8, wherein the transmission comprises a pair of axles mounted in a housing, a transmission control arm mounted on the housing, and a brake arm mounted on the housing; and wherein the pair of axles is located between the transmission control arm and brake arm on the one hand and the vehicle 5 drive and brake controls on the other hand.

10. An axle driving apparatus for a vehicle, comprising:

a transmission mounted in a housing;

at least one axle extending from the transmission housing;

transmission controls mounted on the transmission housing and comprising a 10 control arm and a brake arm;

a brake activation control and drive control mounted on the vehicle; and

a linkage assembly mounted on the vehicle, whereby the axle is located between the linkage assembly and the transmission controls, the linkage assembly comprising:

a first linkage member rotatably mounted with respect to the 15 vehicle and comprising a first pair of oppositely extending arms, wherein one of the first pair of arms is operatively connected to the vehicle drive control and the other of the first pair of arms is operatively connected to the external control arm; and

a second linkage member mounted to be rotatable with respect to the first linkage member and comprising a second pair of oppositely extending arms wherein one of the second pair of arms is operatively connected to the vehicle brake activation control and the other of the 20 second pair of arms is operatively connected to the brake arm.

11. An axle driving apparatus as set forth in Claim 10, wherein the second linkage member is rotatably mounted directly on the first linkage member.

12. An axle driving apparatus as set forth in Claim 19, wherein the transmission comprises a hydrostatic transmission having a pump input shaft extending vertically from the transmission housing; and wherein the axle is located between the pump input shaft and the first and second linkage members.

13. An axle driving apparatus mounted in a vehicle comprising:

a hydrostatic transmission having a drive control and a brake control;

a return arm engaged to the transmission drive control; and

10 a control mechanism engaged to the hydrostatic transmission and comprising a first linkage member engaged to the return arm, a second linkage member engaged to the drive control, and a spring device secured to the brake control and to the return arm in a manner so that movement of the first linkage member a first distance causes the return arm to move the drive control toward a neutral position without engaging the brake control, and further movement of the first linkage member causes the spring device to 15 rotate the brake control.

14. The axle driving apparatus of claim 13, wherein the second linkage member is rotatably mounted on the first linkage member.

15. The axle driving apparatus of claim 13, further comprising a second spring device 20 attached to the return arm and a third spring device attached to the brake control, where the second and third spring devices act to return the return arm and brake control to a deactivated position.

16. The axle driving apparatus of claim 13, wherein the first linkage member and second linkage member both have a pair of oppositely extending arms.
17. The axle driving apparatus of claim 16, wherein the oppositely extending arms on the first linkage are symmetrically located thereon.
- 5 18. The axle driving apparatus of claim 17, wherein the oppositely extending arms on the second linkage are symmetrically located thereon.